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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,678	08/08/2006	Rasmus Rettig	3807	9602

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EXAMINER	
WHITTINGTON, KENNETH	
ART UNIT	PAPER NUMBER
2862	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/588,678	RETTIG ET AL.	
	Examiner	Art Unit	
	KENNETH J. WHITTINGTON	2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5,6 and 8-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,6 and 8-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The Amendment filed August 13, 2008 has been entered and considered. In view thereof, the objections to the Abstract, Drawings and claim 6 have been withdrawn.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3, 8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Eckardt et al. (US4712064), hereinafter Eckardt.

Regarding claim 1, Eckardt discloses a magnetic sensor arrangement, having

magnetically sensitive sensor elements whose electrical properties are changeable as a function of a magnetic field that a moving, passive transmitter element is able to influence, with the magnetic field being substantially perpendicular to the sensor elements (See Eckardt FIGS. 8-9, note pair of sensors 18),

wherein the magnetic sensor arrangement has two sensor elements in a gradiometer arrangement (See col. 5, lines 8-32) that are each respectively associated with one of two regions of a permanent magnet embodied in the form of a gap magnet (See FIGS. 8-9, note face regions of magnet 13), which regions are spaced apart from each other by a predetermined distance (See FIGS. 8-9, note regions separate by gap 17),

the sensor elements are arranged one after the other in a direction of movement of the transmitter element (See FIGS. 8 and 9, note sensors 10);

the sensor elements are associated with edges of a gap in a rotary direction of the transmitter element (See FIGS. 8 and 9, note sensors 19 "associated" with edges of gap 17 through magnet);

the magnetic regions and the permanent gap magnet in terms of the dimensions, the gap width, the gap depth, and their positions in relation to the sensor elements are situated so as to minimize the offset of the output signal of the sensor elements in the gradiometer arrangement (See col. 5, lines 8-32).

Regarding claim 3, Eckardt discloses the gap of the permanent gap magnet has a rectangular contour (See FIGS. 8-9, note gap 17).

Regarding claim 8, Eckardt discloses the magnetic sensor arrangement is used to detect the rotation angle of a wheel serving as the transmitter element, and the circumference of the wheel is provided with teeth in order to influence the magnetic field in the region of the magnetic sensor arrangement (See FIGS. 8-9, note wheel 28).

Regarding claim 10, Eckardt discloses the sensor elements are magnetoresistive XMR sensors (See FIGS. 8-9, note sensors 18 and disclosure related thereto).

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilkinson (US6050242).

Regarding claim 1, Wilkinson discloses a magnetic sensor arrangement, having magnetically sensitive sensor elements whose electrical properties are changeable as a function of a magnetic field that a moving, passive transmitter element

is able to influence, with the magnetic field being substantially perpendicular to the sensor elements (See Wilkinson FIGS. 1-7, note sensors H1 and H2 and magnet M3),

wherein the magnetic sensor arrangement has two sensor elements in a gradiometer arrangement (See FIG. 7, note sensor circuit) that are each respectively associated with one of two regions of a permanent magnet embodied in the form of a gap magnet (See FIGS. 1-7, note face regions of magnet M3), which regions are spaced apart from each other by a predetermined distance (See FIG. 6, note regions separate by gap in curvature in magnet M3),

the sensor elements are arranged one after the other in a direction of movement of the transmitter element (See FIG. 6, note sensors H1 and H2);

the sensor elements are associated with edges of a gap in a rotary direction of the transmitter element (See FIG. 6, note sensor are "associated" with edges of gap in magnet M3);

the magnetic regions and the permanent gap magnet in terms of the dimensions, the gap width, the gap depth, and their positions in relation to the sensor elements are situated so as to minimize the offset of the output signal of the sensor elements in the gradiometer arrangement (See FIGS. 6 and 7, note arrangement and circuit shown).

Regarding claim 2, Wilkinson discloses the gap has a contour with a wedge-shaped narrowing in the direction of the gap depth of the permanent gap magnet (See FIG. 6, note gap magnet M3).

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Wu (US5304926). Regarding this claim, Wu discloses a magnetic sensor arrangement, having

magnetically sensitive sensor elements whose electrical properties are changeable as a function of a magnetic field that a moving, passive transmitter element is able to influence, with the magnetic field being substantially perpendicular to the sensor elements (See Wu FIGS. 1-8, note sensors 12 and 14 and magnet 20),

wherein the magnetic sensor arrangement has two sensor elements in a gradiometer arrangement (See FIGS. 1-8, note sensors receiving opposite fields and in addition arrangement) that are each respectively associated with one of two regions of a permanent magnet embodied in the form of a gap magnet (See FIGS. 1-8, note sensors 12 and 14 at end regions of magnet), which regions are spaced apart from each other by a predetermined distance (See FIGS. 1-8, note gap in magnet),

the sensor elements are arranged one after the other in a direction of movement of the transmitter element (See FIGS. 1-3, note sensors staggered along direction of movement);

the sensor elements are associated with edges of a gap in a rotary direction of the transmitter element (See FIGS. 1-8, note sensors "associated" with gap edges of magnet);

the magnetic regions and the permanent gap magnet in terms of the dimensions, the gap width, the gap depth, and their positions in relation to the sensor elements are

situated so as to minimize the offset of the output signal of the sensor elements in the gradiometer arrangement (See FIG. 1-8, note arrangement and circuit shown).

Claim Rejections - 35 USC § 103

Claims 5 and 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Wu in view of Higgs et al. (US4859941), hereinafter Higgs. Regarding these claims, Wu teaches the sensors mounted adjacent the ends of the magnet, but not any flux conducting plates. Higgs teaches sensors mounted adjacent the end surface of bias magnet wherein a flux conducting plate is provided between the magnet end and the sensor (See Higgs FIG. 1, note plate 16 between magnet 12 and sensors 19). It would have been obvious at the time the invention was made to incorporate the flux conducting plates between the magnet and sensors at taught by Higgs in the apparatus of Wu, such that there is are flux plates positioned between the sensor elements and affixed onto the magnet ends, which provides that each flux plate is embodied in the form of a compact element into which the gap is integrated. One having ordinary skill in the art would do so to make a more uniform magnetic field near the pole end of the magnet (See Higgs col. 1, lines 53-59).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eckardt in view of Higgs. Regarding this claim, Eckardt teaches the wheel is made from a non-magnetic material, but not explicitly the precise material. Higgs teaches a method for measuring the passing of a magnetic wheel using a pair of sensor mounted to a

magnet, wherein the magnetic wheel is made from steel (See Higgs FIG. 1, item 20 and disclosure related thereto). It would have been obvious at the time the invention was made to use steel for the wheel in the apparatus of Eckardt. One having ordinary skill in the art would do because steel is a common material for such tooth gear wheels as noted in Higgs in the cited portion.

Response to Arguments

Applicant's arguments with respect to the rejections over Yokotani et al. (US6107793) and Steinruecken et al. (US2003/0155909) have been considered but are moot in view of the new ground(s) of rejection. The new grounds were required in view of the substantial amendments to the claims.

Applicant's arguments with regard to the rejections over Eckardt have been fully considered but they are not persuasive.

Initially, it is noted that Applicants have stated that "The Examiner indicated that in the patent to Eckardt the slot shown in FIG. 9 must be turned by 90 degrees to be similar to the present invention." However, no statements were made with regard to a "90 degree" rotation in the Non-Final Rejection mailed May 22, 2008 and thus this statement does not make sense. The only statement with regard to any rotation was made in the context of the rejection of claim 7, not claim 1. Claim 7 is now cancelled and thus this statement is not pertinent to pending claims, particularly claim 1.

It is also noted that nothing the claims requires any particular direction of the gap through the magnet and thus this gap can extend through the magnet in any direction

and still read on the claims. With this interpretation, the gap in Eckardt while extending in the direction of movement of the transmitter still reads on the claims as noted above in the rejections. Furthermore, the sensors are "associated" with the edges of the magnet and are arranged one after the other in the direction of movement of the transmitter as noted in the rejections above. Accordingly, the rejections applying Eckardt still read on the claims and therefor remain.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH J. WHITTINGTON whose telephone number

is (571)272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on (571) 272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kenneth J Whittington/
Primary Examiner, Art Unit 2862